

### LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### **Claim 1 (Currently Amended)**

A nozzle piece for a dental powder jet apparatus adapted for an exchangeable assembly on a hand piece and having a discharge nozzle for a fluid as well as a discharge nozzle for discharging a mixture of air and a dental powder suitable for cleaning teeth in the area of a gum pocket, as well as a discharge nozzle for a fluid,

wherein a front partial length at the outlet cross section of the discharge nozzle for the air-powder mixture projects from over a grip of the nozzle piece connected to the hand piece, and

wherein the front partial length is formed as a tube having an outer peripheral surface and is provided with nozzle openings at least in said outer peripheral surface in the lateral area of the front end of the tube, wherein the mouth of the discharge nozzle for the fluid is axially displaced backwards with respect to the discharge nozzle for the air-powder-mixture, and

~~characterized in that the nozzle opening for the air-powder-mixture and the discharge nozzle for the fluid have such dimensions and are disposed such that an eddy or vortex formation is promoted inside the treated (sub-gingival) gum pocket; and in that~~

wherein the fluid discharge nozzle is disposed on one side of the discharge nozzle for the air-powder-mixture.

#### **Claim 2 (Currently Amended)**

The nozzle piece of claim 1, characterized in that the nozzle openings (9, 11, 12, 12<sup>2</sup>) are arranged in a common radial plane of the tube (7, 7<sup>1</sup>, 7<sup>2</sup>, 7<sup>22</sup>) and are spaced in regular distances or in varying distances along the corresponding circumference of the tube.

#### **Claim 3 (Currently Amended)**

The nozzle piece of claim 1, characterized in that the nozzle openings (9) are arranged in at least two different radial planes of the tube (7<sup>22</sup>) and in that the nozzle openings in one radial

plane are twisted with respect to the nozzle openings in the other radial plane in the circumferential direction of the tube.

**Claim 4 (Currently Amended; Withdrawn)**

The nozzle piece according to claim 1, characterized in that the nozzle openings (9) are formed as radial passages.

**Claim 5 (Currently Amended; Withdrawn)**

The nozzle piece according to claim 1, characterized in that the nozzle openings (11) are formed as beveled passages, forming an acute angle with the axis of the tube (7<sup>222</sup>).

**Claim 6 (Currently Amended; Withdrawn)**

The nozzle piece according to claim 1, characterized in that the nozzle openings (12, 12<sup>a</sup>) are formed as tangentially oriented or skewed passages characterized in that the nozzle opening for the air-powder-mixture and the discharge nozzle for the fluid have such dimensions and are disposed such that an eddy or vortex formation is promoted inside the treated (sub-gingival) gum pocket.

**Claim 7 (Currently Amended; Withdrawn)**

The nozzle piece of claim 6, characterized in that the axes of the tangential or skewed passages (12<sup>a</sup>) are oriented in an acute angle to the axial plane of a tube (7).

**Claim 8 (Currently Amended; Withdrawn)**

The nozzle piece according to claim 5 or 6, characterized in that the outlet cross sections of the beveled passages and/or the tangential or skewed passages (12, 12<sup>a</sup>) are disposed downstream of the corresponding inlet cross sections of the passages.

**Claim 9 (Currently Amended; Withdrawn)**

The nozzle piece of claim 6, characterized in that the axes of the tangential or skewed passages (12, 12<sup>a</sup>) run in a common radial plane of a tube (7).

**Claim 10 (Currently Amended)**

The nozzle piece of claim 1, characterized in that the nozzle openings (17) are elongated or slot-shaped.

**Claim 11 (Currently Amended)**

The nozzle piece according to claim 10, characterized in that a defined longitudinal axis of the slot-shaped nozzle openings (17) is parallel to the main axis of the tube or forms an angle to a lateral area of the tube.

**Claim 12 (Currently Amended)**

The nozzle piece according to claim 2 or claim 3, characterized in that in one or each of the radial planes of the tube (~~7, 7', 7'', 7'''~~) at least three nozzle openings (~~9, 11, 12, 12'~~) are disposed along the corresponding circumference of the tube.

**Claim 13 (Currently Amended)**

The nozzle piece according to claim 1, characterized in that the front end of the tube (~~7, 7'''~~) is either closed or provided with an axial nozzle opening (10).

**Claim 14 (Currently Amended; Withdrawn)**

The nozzle piece according to claim 13, characterized in that the axial nozzle opening (~~10''~~) is diffuser-shaped.

**Claim 15 (Currently Amended; Withdrawn)**

The nozzle piece according to claim 13, characterized in that the axial nozzle opening (~~10~~) is shaped in the style of a venturi nozzle (13).

**Claim 16 (Currently Amended; Withdrawn)**

The nozzle piece of claim 13, characterized in that the axial nozzle opening (10) is provided with an outlet cross section (10a) which narrows in the axial direction.

**Claim 17 (Currently Amended)**

The nozzle piece of claim 13, characterized in that the axial nozzle opening (10) is asymmetrically formed in order to deflect the discharged air-powder-mixture jet from the axis of the tube.

**Claim 18 (Currently Amended)**

The nozzle piece of claim 13 ~~one of claims 13-16~~, characterized in that a deflection body (15, 16) is provided at the axial nozzle opening (10), the deflection body directing the discharged air-powder-mixture jet against the treated tooth surface.

**Claim 19 (Currently Amended)**

The nozzle piece according to claim 18, characterized in that the deflection body (16) is interchangeably mounted on the tube (7).

**Claim 20 (Currently Amended)**

The nozzle piece of claim 1, characterized in that, the fluid discharge nozzle (18) is concentrically arranged to the discharge nozzle for the air-powder-mixture.

**Claim 21 (Currently Amended)**

The nozzle piece of claim 1, characterized in that the fluid discharge nozzle (18) is provided with a diffuser-shaped outlet cross section.

**Claim 22 (Canceled)**

**Claim 23 (Currently Amended)**

The nozzle piece of claim 1, characterized in that the tube-shaped front partial length (8) of the nozzle piece (2) has an arched shape ending at the nozzle openings of the discharge nozzle.

**Claim 24 (Currently Amended)**

The nozzle piece of claim 1, characterized in that the tube-shaped front partial length ~~(8)~~ of the nozzle piece ~~(2)~~ has an oval to elliptic cross section.

**Claim 25 (Currently Amended)**

The nozzle piece of claim 1, characterized in that the tube-shaped front partial length ~~(7, 7<sup>i</sup>, 7<sup>ii</sup>, 7<sup>iii</sup>, 8)~~ of the nozzle piece ~~(2)~~ is made of a material behaving atraumatically regarding its hardness and surface texture, in particular of polycarbonate or another plastic.

**Claim 26 (Currently Amended)**

The nozzle piece of claim 1, characterized in that at least one of a scale ~~(20)~~ and a color partitioning for marking the position of the nozzle openings relative to the main axis of the hand piece is provided on the tube-shaped front partial length ~~(7, 7<sup>i</sup>, 7<sup>ii</sup>, 7<sup>iii</sup>, 8)~~ of the nozzle piece ~~(2)~~.

**Claim 27 (Currently Amended)**

The nozzle piece of claim 1, characterized in that the tube ~~(7)~~ is composed of a single-use product exchangeably mounted on the grip ~~(1)~~.

**Claim 28 (Currently Amended)**

The nozzle piece of claim 1, characterized in that the tube ~~(7)~~ is held by a holding piece ~~(21)~~ which is rotatable relative to the grip ~~(1)~~.

**Claim 29 (New)**

A nozzle piece for a dental powder jet apparatus adapted for an exchangeable assembly on a hand piece and having a discharge nozzle for a fluid as well as a discharge nozzle for discharging a mixture of air and a dental powder suitable for cleaning teeth in the area of a gum pocket, wherein a front partial length at the outlet cross section of the discharge nozzle projects from a

grip of the nozzle piece connected to the hand piece, and wherein the front partial length is formed as a tube having an outer peripheral surface at least in said outer peripheral surface, wherein the mouth of the discharge nozzle for the fluid is axially displaced backwards with respect to the discharge nozzle for the air-powder-mixture.